REMARKS

Amendments to the Claims

Claim 74 has been amended to clarify that the film's yield plateau is located between the second yield point and the natural draw ratio. Support for this amendment can be found in the original disclosure with reference to Figure 1. Paragraph [0005] indicates the location of the "second yield point" as Point 14 on Curve 10 of Figure 1. Page 2, Lines 13-14 states that "Region 20 of the curve, *i.e.*, the region between the second yield point 14 and the natural draw ratio point 16, is termed the "yield plateau" region." This provides a basis for the wording in Claim 74 where the film has a yield plateau that is interposed between the second yield point and the natural draw ratio. This is consistent with the description in Paragraphs [0115] and [0116].

Claim 74 has further been amended to recite the extent of stretching and elongation applied to the film, *i.e.*, that the stretching force is applied to the film by elongating the film to a point on the yield plateau but less than the natural draw ratio. The wrapping process is described in Paragraph [0154]; lines 10 to 12 state that "the inventive film has a broad yield plateau at larger stresses than the comparative films, indicative of superior holding force over a wide range of elongation." A person skilled in the art would appreciate that the "holding force" is the elastic return force exerted on the article(s) being wrapped that is exerted by the film at the end of the wrapping step. This "holding force" is applied in the "broad yield plateau," indicating to a person skilled in the art that the film was stretched and elongated to reach the yield plateau region, and thus the film was stretched past the second yield point. Thus, the disclosure states that the film can be used at an elongation past the second yield point, a point into the plateau region. In Paragraph [0006], it states that "in practice, the natural draw ratio is a better measure of maximum elongation." This statement indicates that the elongation should not exceed the natural draw ratio, that is, it should not exceed the point where the natural strain hardening region starts. Thus, the description read as a whole provides clear disclosure that in wrapping an article the film may be elongated to the yield plateau and less than the natural draw ratio.

Claim 77 has been amended to correct a typographical error.

No new matter has been added.

Rejection Under 35 U.S.C. § 103(a)

The pending claims were rejected under 35 U.S.C. 103(a) as being unpatentable over *Lue et al.* (US 6,255,426) in view of *Miro* (US 6,132,827) and *Wong et al.* (US 6,358,457). Applicants respectfully traverse this rejection.

To establish *prima facie* obviousness, there must first be some suggestion or motivation in the art to modify the references, second, there must be a reasonable expectation of success and thirdly, the references must teach or suggest all the claim limitations. *See* M.P.E.P. § 2143. Applicants submit that none of the cited references, either individually or in combination with one another, disclose or suggest that the stretching force is applied past the second yield point into the yield plateau but less than the natural draw ratio as required in the amended Claim 74.

Lue only makes a passing reference to films in general, and then only states that its films can be used for "heavy duty bags, shrink film, agricultural film, particularly which are down-gauged such as garbage and shopping bags with a thickness of from 0.5 to 7 mil". *See Lue* Column 10, Lines 57-60. *Lue* does not reference any stretch film applications.

A person skilled in the art would appreciate that the *shrink films* referred to in *Lue* and the inventive *stretch films* would have different characteristics and would involve different methods of wrapping. In general, shrink films do not have significant elasticity at room temperature and are shrunk by applying heat in the course of wrapping. On the other hand, stretch wrapping is performed without the application of heat, and films for stretch wrapping require low stiffness and a high resistance to tear propagation. Thus, the stretch-wrapping method of Claim 74 is not disclosed in *Lue*, nor does *Lue* disclose that the stretching must extend beyond the second yield point and reach the yield plateau region but be less than the natural draw ratio.

Miro discloses stretch films, however *Miro* does not disclose or suggest the stretch-wrapping method of Claim 74, nor does *Miro* disclose that the stretching must extend beyond the second yield point and reach the yield plateau region but be less than the natural draw ratio.

While *Wong* discloses a method of stretching films, the stretching in *Wong* is used to biaxially orient a film by stretching the film in two directions simultaneously. *See Wong* Column 2, Lines 5-18. In *Wong* the preferred method of stretching is using a flat film tenter apparatus for biaxial stretching, and the stretching occurs after heating the film. *See Wong* Column 3, Lines 9-

13; Column 10, Lines 58-64; and Column 16, Lines 12-13. The films stretched in *Wong* are then used as tape backing. *See Wong* Column 4, Lines 52-57. *Wong* does not disclose or suggest the method of wrapping an article as claimed in Claim 74 wherein the article is wrapped with the stretch film where the stretching force is applied so that the film is elongated to a point beyond the yield plateau but less than the natural draw ratio.

Normally, elongating a film beyond the second yield point to take advantage of the broad plateau region increases the risk of "*tiger striping.*" *See* Page 2, Paragraph [0005]. Tiger striping occurs when a film is stretched to a point where differences in the film's thickness are amplified and thinner sections are thus reduced more in thickness than thicker film sections as the stretching progresses. Tiger striping becomes more pronounced when films are made of polymers having tensile stress curve portions that are too close to horizontal (*i.e.*, the slope is zero) or when curve's slope is negative.

Paragraph [0114] on Page 27 recognizes that in films poorly suited to stretching applications one or both of the first or second yield points may be a local maximum, indicating that in such cases the inflection point (2^{nd} yield point) is followed by a downwardly sloped portion of the plateau region. Thus, in such films the second yield point is immediately followed by a region in which tiger striping may be manifested. Other problems such as longitudinal tearing and excessive neck-in may also arise upon excessive stretching.

The risk of tiger striping or the contribution a polymer can make to avoid tiger striping can be assessed starting from its tensile-stress curve and in particular the absence of negatively sloped regions within an overall positively sloped plateau region as well as the extent of elongation occupied by the plateau region and the steepness of the positive slope.

The table below summarizes the tensile behavior of the different polymers in Example 5 (Page 41). The data for the 2^{nd} yield and the natural draw ratio ("NDR") was determined from the tables in the specification using linear regression with an Excel program as described in Paragraph [0116] Page 28.

Polymer	2nd Yield @	Stress at 2nd Yield	NDR @	Stress at NDR	Length Yield Plateau	NDR minus 2nd Yield	Yield Plateaus Slope MPa per %	Zero or Negative slopes at (%)
Claim 1	-	> 12 MPa	> 250%	> 22 MPa	-	-	-	-
Invention, Table 6	70%	15.7 MPa	310%	27 MPa	70-200%	240%	0.023	None
Elite 5101, Table 5	55%	14.2 MPa	240%	25 MPa	55-140%	185%	0.012	65-75%
Exceed 1018, Table 7	60%	10.6 MPa	370%	26 MPa	60-200%	310%	0.008	75-125%

The table shows that the film with Elite™ 5101 polymer has a short elongation period between the second yield and the natural draw of only 185%. The slope of the yield plateau is largely positive but has a negative or zero slope portion which would limit the extent of stretching possible without risking tiger striping or other film defects. The film with Exceed™ 1018 polymer has a much longer plateau region but has a slope close to horizontal, which would promote tiger striping and high neck-in. With the inventive film (Table 6) higher amounts of elongation can be utilized in the plateau region providing a higher holding force.

"It has surprisingly been found that films of the invention exhibit improved properties, such as applicability over a wide range of stretch ratios without suffering from local deformation leading to break, hole formation, tiger striping, or other defects." Paragraph [0095]. The inventive films in Table 6 (Curve 32 in Figure 2A) have a broad yield plateau at larger stresses than the comparative films. The broader yield plateau indicates a superior holding force over a wide range of elongation. *See* Paragraph [0153].

None of *Lue, Miro, or Wong* disclose stretch wrapping applications and recommend or suggest the amount of stretching desired. Thus, the amended claim is novel and inventive over *Lue, Miro, and Wong* by positively requiring that the elongation during stretching be sufficient to enter the plateau region yet be less than the natural draw ratio. One of ordinary skill in the art would not have thought adding tackifier to a copolymer and applying a stretching force by

elongating the film past the second yield point to the yield plateau but less than the natural draw ratio would produce stretch films that exhibit the combination of a large natural draw ratio, large tensile stress at second yield, large tensile stress at the natural draw ratio, and positive yield plateau slope large enough to absorb typical variations in film thickness uniformity without tiger striping. Instead, one of ordinary skill in the art would have expected a diminution in properties (e.g., tiger striping) when stretched past the second yield point as shown by the Comparative Examples.

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If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated. If necessary to affect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to affect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2002B117/2US).

Respectfully submitted,

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